

What is claimed is:

- 1 1. A method comprising:
2 providing a user-defined data type;
3 providing security information for the user-defined data type;
4 storing data instances according to the user-defined data type; and
5 associating the security information with the data instances.
- 1 2. The method of claim 1, wherein associating the security information
2 comprises associating the security information with each individual data instance.
- 1 3. The method of claim 1, wherein associating the security information
2 comprises associating an access list containing a list of identifiers of authorized entities.
- 1 4. The method of claim 1, further comprising:
2 providing one or more functions to perform predetermined one or more
3 tasks for the user-defined data type; and
4 invoking the one or more functions to process data instances according to
5 the user-defined data type.
- 1 5. An article comprising at least one storage medium containing instructions
2 executable in a database system, the instructions when executed causing the database
3 system to:
4 provide a first data type defining security information relating to access
5 rights;
6 store an instance of data according to the first data type in the database
7 system; and
8 associate the security information with the instance of data.
- 1 6. The article of claim 5, wherein the instructions when executed cause the
2 database system to further:
3 receive a request to access the instance of data; and

4 grant access to the instance of data based on the security information.

1 7. The article of claim 5, wherein the instructions when executed cause the
2 database system to provide the first data type by providing a user-defined data type.

1 8. The article of claim 7, wherein the instructions when executed cause the
2 database system to provide the user-defined data type by providing the user-defined data
3 type in an object relational database system.

1 9. The article of claim 5, wherein the instructions when executed cause the
2 database system to store the instance of data by storing the instance of data in an object
3 relational database system.

1 10. The article of claim 5, wherein the instructions when executed cause the
2 database system to further associate one or more functions with the instance of data, the
3 one or more functions to provide one or more predefined tasks.

1 11. The article of claim 10, wherein the instructions when executed cause the
2 database system to further invoke at least one of the functions to add an identifier of an
3 authorized entity to the security information, the authorized entity being authorized to
4 access the instance of data.

1 12. The article of claim 11, wherein the authorized entity comprises an
2 authorized user.

1 13. The article of claim 11, wherein the security information comprises a list
2 of identifiers of authorized entities.

1 14. The article of claim 11, wherein the instructions when executed cause the
2 database system to further invoke another one of the security functions to remove an
3 identifier from the security information.

1 15. The article of claim 5, wherein the instructions when executed cause the
2 database system to provide the first data type by providing the first data type defining one
3 or more security functions to perform one or more predefined tasks.

1 16. The article of claim 15, wherein the instructions when executed cause the
2 database system to further provide a second data type built upon the first data type, the
3 second data type inheriting the security information and one or more security functions of
4 the first data type, wherein the second data type further defines one or more additional
5 security functions.

1 17. A database system, comprising:
2 one or more storage modules to store instances of data, each instance of
3 data being according to a first secure data type associated with security information; and
4 a controller adapted to determine whether or not to grant access to one of
5 the instances of data in response to a query based on whether the associated security
6 information indicates that a source of the query has permission to access the one instance
7 of data.

1 18. The database system of claim 17, comprising an object relational database
2 management system.

1 19. The database system of claim 17, wherein the first secure data type
2 comprises a user-defined data type.

1 20. The database system of claim 17, the one or more storage modules to
2 further store instances of data according to a second secure data type.

1 21. The database system of claim 20, wherein the second secure data type is
2 inherited from the first secure data type.

1 22. The database system of claim 17, wherein each instance of data is further
2 associated with one or more methods defined by the first secure data type, and wherein
3 the controller is adapted to invoke the one or more methods to process instances of data
4 according to the first secured data type.

1 23. A database system comprising:
2 one or more storage modules to store data instances according to a secure
3 user-defined data type, the secure user-defined data type defining security information
4 and one or more security functions; and
5 a controller adapted to receive a Structured Query Language query
6 originated by a source for one of the data instances, the controller adapted to determine if
7 the source is authorized to access the one data instance based on the security information,
8 the controller adapted to further invoke the one or more security functions
9 to process the one data instance.